

# Simplified Metrics for the Identification of the Madden-Julian Oscillation in Models

## Objectives

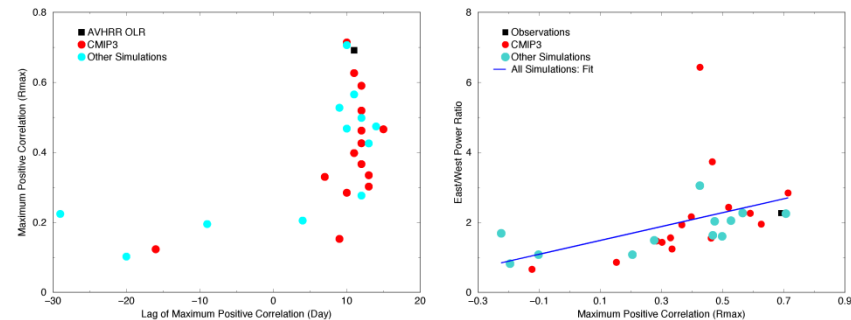
- Develop simple metrics for assessing model skill of simulation the Madden-Julian Oscillation
- Compare the skill of the simple metrics vs. more complex metrics

## Approach

- Obtain principal component (PC) time series from each model by projecting model outgoing longwave radiation onto 2 leading EOF's of observed MJO variability
- From PC time series calculate/plot the maximum positive correlation and the time lag at which it occurs (left figure)
- The maximum positive correlation is as skillful as the East/West Power ratio

obtained from space-time decomposition of rainfall, as indicated by the statistically significant linear regression (right figure)

Maximum positive correlation vs. time lag (left); Maximum positive correlation vs. East/West Power Ratio (right)



## Impact

- The simple method provides an indication of the coherence of MJO propagation and its time scale
- The simple metric has been recommended to the WGNE/WGCM Climate Metrics Panel for use in model evaluation